

The Wood In Firewood

All firewood is not created equal. While it's true that the energy content of a pound of wood (dry - zero percent moisture), no matter the type, is about the same (8,600 Btu's), the density of wood makes its wood burning quality quite different.

The moisture content in firewood also effects its quality of burning. Burning green wood not only produces more creosote but is less efficient because it must remove the water. Any moisture in the wood reduces the heat directed to the home by carrying heat up the chimney during vaporization.

On top of that, the efficiency of the wood burning appliance also contributes to the quality and effectiveness of the wood burned.

When all other factors are equal, a denser wood will produce more Btu's. Dense dry wood produces the most heat.

How Wood Burns

When wood burns, three things happen

1. **W**ater is removed by vaporization.
2. **C**hemically, the wood breaks down into charcoal, gas and volatile liquids, where carbon dioxide and water are the basic end products.
3. **T**he charcoal burns, forming carbon dioxide either directly or with an intermediate conversion to carbon monoxide.

Each pound of water vaporized uses about 1,200 Btu.

A pound of wood with a 20% moisture content contains 0.17 pound of water and 0.83 pound of completely dry wood, having a heat value of 7,000 Btu.

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